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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,133	07/21/2003	Theodore W. Rogers	34741-872	8021

7590 03/01/2006

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EXAMINER

KRAMER, DEAN J

ART UNIT PAPER NUMBER

3652

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/624,133	Applicant(s) ROGERS ET AL.	
	Examiner Dean J. Kramer	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-23,27 and 33-35 is/are pending in the application.
 4a) Of the above claim(s) 9-16,22,23,27 and 33-35 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1,3-6 and 17-21 is/are rejected.
 7) ☒ Claim(s) 7 and 8 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed 2/2/06 and the remarks presented therewith have been carefully considered. However, they are not deemed to be fully persuasive.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tamai et al. (5,702,228).

The Tamai et al. patent shows an embodiment in Figures 10-11B comprising a pair of gripper arms (152A,152B) with contact pads (155A,155B) whose movements are dynamically controlled by the camming engagement between rollers (154A,154B) and surfaces (157A,157B,158A,158B). In other words, after the gripper arms engage a wafer (when the robot arm is contracted), they continuously change the gripping force exerted on the wafer's edge as they move to a release position (see col. 17, line 65- col. 18, line 2).

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hosoda et al. (4,715,637).

The patent to Hosoda et al. shows an embodiment in Figure 19 comprising a first (4) and second (5) gripper arm, means (6) for moving the gripper arms, and a means (190-196) for dynamically adjusting a gripping force on a wafer once the gripper arms are in a workpiece engaging position. Members (190,191) are deemed to be part of arms (4,5), respectively, and can be inflated to "adjust" the gripping force exerted on a wafer.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 17, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoda et al. in view of Ayers (5,022,695).

Hosoda et al. was presented above in section 3 and substantially shows the invention as set forth in the above claims except for a force sensing means on its gripper arms.

However, Ayers shows a wafer gripping mechanism wherein the force exerted on the edge of a wafer is detected in gripper arm (50) by a Hall effect sensor (26) such that the linear actuator (20) can be controlled to protect the gripped wafer.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a force sensing means on the gripper arms of the Hosoda et al. end effector as taught by Ayers so that different sized wafers could be

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securely held but not damaged by the moveable gripper arms. In regard to claims 20 and 21, it would have been an obvious matter of design choice to use any well known force sensor, such as a load cell or strain gauge, as is commonly used in the robotics art especially since applicant has not specifically disclosed that this particular type of force sensor solves any stated problem or is for any critical purpose. In response to applicant's arguments, it is pointed out that while Ayers applies a predetermined force to a wafer, this force is detected using a feedback mechanism and can be adjusted (see col. 6, lines 10-22).

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoda et al. in view of Ayers as applied to claims 3, 17, 18, 20, and 21 above, and further in view of Fossey et al. (5,988,971).

Fossey et al. shows a wafer handling blade including a plurality of capacitance sensors (61,62) for detecting the presence of a wafer without actually contacting the wafer.

It would have been obvious to a person having ordinary skill in the art to provide the modified Hosoda et al. device, presented supra, with capacitance sensors similar to those shown in the Fossey et al. patent in order to properly orient the resulting gripper arms with respect to a wafer without have to first contact the wafer and possibly damage its surface.

7. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai et al. in view of Bacchi et al. (6,256,555).

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The Bacchi et al. patent shows a wafer handling blade with thru-beam optical sensors (80,82) for accurately detecting the edge of a wafer.

It would have been obvious to one of ordinary skill in the art to provide edge sensors similar to those shown in the Bacchi et al. patent on the contact pads of the Tamai et al. device as an effective means of sensing the edge of a wafer.

Allowable Subject Matter

8. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. This application contains claims 9-16, 22, 23, 27, and 33-35 drawn to an invention nonelected without traverse in the response filed 8/23/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

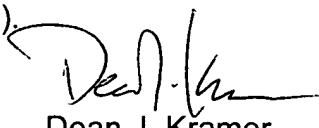
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean J. Kramer whose telephone number is (571) 272-6926. The examiner can normally be reached on Mon., Tues., Thurs., Fri. (7:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Dean J. Kramer
Primary Examiner
Art Unit 3652

2/23/06

djk
2/23/06